Research Supporting the Selection of Prevention Outcome Measures by the New Hampshire Division of Alcohol and Drug Abuse Prevention and Recovery

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Background

"Prevention programs are based on the premise that the onset of drug use can be deterred because key characteristics of the individual or the environment, often the peer group, can be changed. Program designers variously refer to such characteristics as risk (or mediating) factors or protective (or moderating) factors. The goal of prevention program implementation is to effect changes in these key characteristics, with the idea that the changes will then serve to suppress risk or augment protection (or both). Measuring these characteristics is critical in determining short-term program effectiveness and in understanding how programs achieve their results" (CSAP, 2003).

The purpose of this document is to summarize research supporting the selection of prevention outcome measures by the New Hampshire Division of Alcohol and Drug Abuse Prevention and Recovery (DADAPR). To this end, the materials presented in this document draw heavily on three seminal documents from the field of substance abuse prevention: Hawkins, Catalano, and Miller's (1992) article, *Risk And Protective Factors For Alcohol And Other Drug Problems In Early Adulthood*; the Center for Substance Abuse Prevention's (2003) *Core Measures Initiative Phase I Recommendations*; and, the Center for Substance Abuse Prevention's (1997) *Selected Findings in Prevention: A Decade of Results for Substance Abuse Prevention*.

DADAPR Prevention Outcome Measures

DADAPR prevention outcome measures are categorized by those that are intended for use with general youth populations, those for selected youth populations, and those for family-based programs.

General Youth Population Measures

For prevention efforts that focus on changing the likelihood of alcohol and other drug initiation and use among general populations of youth, DADAPR recommends the use of the following individual and peer related measures:

- Favorable Attitudes Towards Use or Disapproval of Use
- Perceived Harm or Perceived Risk of Drug Use
- Perceived Peer Alcohol, Tobacco, or Other Drug (ATOD) Use
- Social Skills Training and/or Life Skills/Peer Resistance

Selected Youth Population Measures

For prevention efforts that focus on reducing alcohol and other drug use, and related problems, among youth already demonstrating high risk behaviors, and therefore at higher risk for alcohol and drug problems, DADAPR recommends the use of the following measures in addition to those used for general youth populations:

- ATOD Use

- Binge Drinking
- Academic Performance
- Commitment to School

Family-Based Program Measures

For family and/or parent-based prevention efforts that focus on changing the likelihood of alcohol and other drug initiation and use among youth with family-related risk factors, DADAPR recommends the use of the following measures:

- Perceived Parental Attitudes Toward Youth ATOD Use
- Parenting Skills/Bonding or Parent Supervision
- Family Management Practices

Document Structure

For each measure indicated above, this document presents information on the developer of the proposed measure, the source of the measure, the reliability of the measure, the populations for which the measure is appropriate, the number of individual items contained in each measure, the purpose of the measure, the actual proposed items, a rationale for using the measure, the relationship of the measure to other applicable measures, and selected research studies in support of the proposed measure.

Developer

This section presents information on the individual(s) who developed the measure under consideration, including information on organizational affiliation(s).

Source

This section presents information on the source of the proposed measure. The measures identified are often a sub-set of items from larger national surveys. In these cases, information on the source instrument from which these measures were taken is provided.

Scale Reliability

Reliability refers to the degree to which a group of items are consistent and stable in measuring what they intend to measure. Measures are said to be reliable if the items are consistent with one another and consistent across time. Simply put, the reliability of a measure is one assessment of how "good" a measure is. Reliability is measured by a statistic called *Chronbach's alpha* that ranges between a value of 0.00 and 1.00. The table below, adopted from George and Mallery (2003) provides an easy way to interpret the reliability score for each measure. For ease of interpretation, these classification terms are repeated in-text next to the reliability score.

Table 1: Interpretation of the Chronbach's Alpha Statistic

Chronbach's Alpha Score	Classification
1.00 to 0.90	Excellent Measure
0.89 to 0.80	Good Measure
0.79 to 0.70	Acceptable Measure
0.69 to 0.60	Questionable Measure
0.59 to 0.50	Poor Measure
0.49 to 0.00	Unacceptable Measure

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update* (4th ed.). Boston: Allyn & Bacon.

Populations

This section presents information on populations with which the measure has been used and those with whom the measure has been scientifically tested. While virtually all of the measures have been used with students in grades 6-12, some measures have also been specifically validated for use with sub-groups (e.g., racial/ethnic groups).

Number of Items

For each measure, this section presents the number of individual items that make up the overall measure. With the exception of items designed to measure alcohol, tobacco, and other drug use (ATOD) and those designed to measure binge drinking, individual items are often combined together into a single performance score for each measure. As stated by McIver and Carmines (1981)[1],

> It is very unlikely that a single item can fully represent a complex theoretical concept or any specific attribute for that matter. The most fundamental problem with single item measures is not merely that they tend to be less valid, less accurate, and less reliable than their multi-item equivalents. It is rather, that the social scientist rarely has sufficient information to estimate their measurement properties.

For this reason, "complex theoretical concepts" such as *Favorable Attitudes Towards Use*, *Commitment to School*, and *Family Management Practices* are measured using multiple items rather than single questions.

Purpose

This section provides information on the purpose of the scale. For example, for the measure on *Favorable Attitudes Towards Use or Disapproval of Use*, the purpose of the selected items is to "assess students' attitudes towards using drugs."

Items

This section presents each of the individual items for each measure exactly as they are worded in the original instrument. For purposes of length, response options for questions have been omitted. Copies of the proposed survey items, complete with response options, are available from DADAPR upon request.

[1] McIver, J.P., & Carmines, E.G. (1981). *Unidimensional scaling*. Thousand Oaks, CA: Sage.

Rationale for Using Items

This section presents findings from selected research studies supporting the measurement of each different construct. For example, in support of measuring *Favorable Attitudes Towards Use or Disapproval of Use*, research is presented where researchers found that initiation into substance use by adolescents is often preceded by values favorable to its use.

Relationships with Other Measures

For many of the measures described above and discussed throughout this document, researchers have studied how the measure relates to other measures. The extent to which two measures are related to one another is measured by a statistic called *Pearson's r* that ranges between a value of .00 and 1.0. The strength of the relationship between two measures, either positive (the two factors increase or decrease at the same time) or negative (movement of the factors in opposite directions), is often referred to as the "correlation" between the measures. The table below, adopted from the *Handbook of Research Design and Social Measurement (5th Edition)* provides an easy way to interpret the *Pearson's r* statistic. For ease of interpretation, these terms are repeated in-text next to the *Pearson's r* value.

Table 2: Interpretation of the Pearson's r Correlation Statistic

Pearson's r Value	Strength of Relationship
1.00 to .80	Highly Related
.79 to .60	Strong, Useful Relationship
.59 to .40	Substantial Relationship
.39 to .20	Some Slight Relationship
.00 to .19	Little or No Relationship

Miller, D.C. (Ed.) (1991). *Handbook of Research Design and Social Measurement (5th ed.). Newbury Park: Sage.*

As an example, researchers have found a positive correlation between poor family management practices and 30-day alcohol use (*Pearson's r* = .31). By looking up .31 in the table above, we find that there is "some slight relationship" between poor family management practices and 30-day alcohol use. In other words, students who reported poor family management practices were somewhat more likely than those who reported good family management practices to use alcohol in the past 30 days, and vice versa.

It is important to note the distinction between "correlation" and "causality". In short, "correlation" means that the two factors occur at the same time whereas "causality" speaks to the cause and effect relationship between the two factors. An established correlation between two factors, such as the above-cited correlation between family management practices and alcohol use, does not necessarily establish either the existence or direction of a cause and effect relationship between the two.

Selected Research Studies

This section presents citations for references used in the "Rationale for Using Items" section, the citation for the source of the instrument, and specific studies in which the measure has been used.

Favorable Attitudes Toward Use or Disapproval of Use

Developer
Michael Arthur of the Social Development Research Group at the University of Washington

Source
Student Survey of Risk and Protective Factors – Favorable Attitudes Toward Drug Use

Scale Reliability
Good Reliability: 0.88

Populations
This scale has been used with students in grades 6, 8, 10, and 12. It has been specifically tested with male and female students and by student grade level.

Number of Items
This scale consists of 4 items.

Purpose
Assesses students' attitudes toward using drugs.

Items
1. How wrong do you think it is for someone your age to drink beer, wine, or hard liquor (for example, vodka, whiskey, or gin) regularly?
2. How wrong do you think it is for someone your age to smoke cigarettes?
3. How wrong do you think it is for someone your age to smoke marijuana?
4. How wrong do you think it is for someone your age to use LSD, cocaine, amphetamines, or another illegal drug?

Rationale for Using Items
In a review of the literature, Hawkins, Catalano, and Miller (1992) found that initiation into substance use is preceded by values favorable to its use. Similar findings from the Center for Substance Abuse Prevention (CSAP) Demonstration Projects indicate that adolescent perceptions of the risks/benefits of alcohol and other drug use correlate with the likelihood of initial use (CSAP, 1997).

Relationships with Other Measures
As shown in Table 3, research conducted on this scale found positive relationships between students' attitudes towards using drugs with whether or not students had *ever* used any of these substances, and whether students had used any of these substances in the *past 30 days*. In other words, students with favorable attitudes toward use of these substances were more likely to use these substances and vice-versa. The strongest relationships were for lifetime use of marijuana and use of cigarettes (CSAP, 2003).

Table 3: Correlation of Favorable Attitudes Toward Use with Other Measures [(a)]

Other Measures	Time Frame	Correlation (r) to Scale	Correlation Strength
Cigarette Use	Lifetime	.52	Substantial
	30-Day	.53	Substantial
Alcohol Use	Lifetime	.42	Substantial
	30-Day	.51	Substantial
Marijuana Use	Lifetime	**.57**	Substantial
	30-Day	.49	Substantial
Illicit Drug Use	Lifetime	.48	Substantial
	30-Day	.41	Substantial

[(a)] Bold numbering indicates the *strongest* relationship.

Selected Research Studies

Arthur, M. W., Hawkins, J. D., Pollard, J. A., Catalano, R. F., & Baglioni, A. J. (2002). Measuring risk and protective factors for substance use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. *Evaluation Review*, 26(2), 575-601.

Center for Substance Abuse Prevention (1997). Selected findings in prevention: A decade of results from the Center for Substance Abuse Prevention (CSAP).

Center for Substance Abuse Prevention (2003). Core measures initiative phase I recommendations. Center for Substance Abuse Prevention: Rockville, MD.

Hawkins, D.J., Catalano, R.F., & Miller, J.Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin*, 112, 64-105.

Kandel, D.B. (1978). Homophily, selection and socialization in adolescent friendships. *American Journal of Sociology*, 84, 427-436.

Krosnick, J.A. & Judd, C.M. (1982). Transitions in social influence at adolescence: Who induces cigarette smoking? *Developmental Psychology*, 18, 359-368.

Pollard, J. A., Hawkins, J. D., & Arthur, M. W. (1999). Risk and protection: Are both necessary to understand diverse behavioral outcomes in adolescence? *Social Work Research*, 23(8), 145-158.

Smith, G.M., & Fogg, C.P. (1978). Psychological predictors of early use, late use, and non-use of marijuana among teenage students. In D.B. Kandel (Ed.), *Longitudinal research on drug use: Empirical findings and methodological issues* (pp. 101-112). Washington, DC: Hemisphere-Wiley.

Perceived Harm or Perceived Risk of Drug Use

Developer
Dr. Michael Arthur, Dr. J. David Hawkins, Dr. Richard Catalano, and Dr. John Pollard of the Social Development Research Group at the University of Washington

Source
Student Survey of Risk and Protective Factors – Perceived Risk of Drug Use

Scale Reliability
Good Reliability: 0.88

Populations
This scale has been used with students in grades 6, 8, 10, and 12. It has been specifically tested with African-Americans, Asian/Pacific Islanders, Hispanics, Native Americans, Whites, and by student grade level.

Number of Items
This scale consists of 4 items.

Purpose
Assesses students' perception of the potential risks due to drug use.

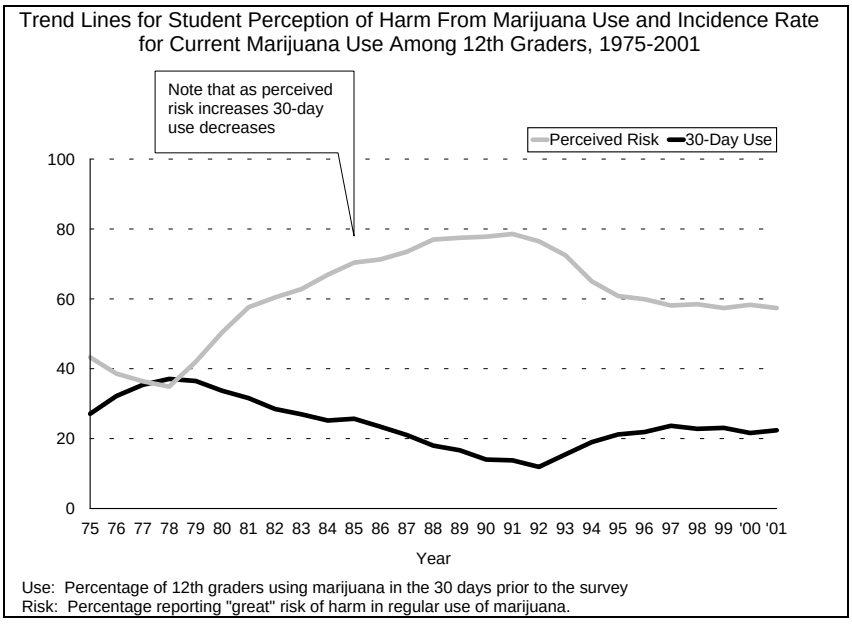
Items
1. How much do you think people risk harming themselves (physically or in other ways) if they smoke one or more packs of cigarettes per day?
2. How much do you think people risk harming themselves (physically or in other ways) if they try marijuana once or twice?
3. How much do you think people risk harming themselves (physically or in other ways) if they smoke marijuana regularly?
4. How much do you think people risk harming themselves (physically or in other ways) if they take one or two drinks of an alcoholic beverage (beer, wine, liquor) nearly every day?

Rationale for Using Items
Data from the *Monitoring the Future* survey, a national study of secondary school students that has been conducted by the National Institute on Drug Abuse, have demonstrated an inverse relationship between the level of reported drug use and the level of perceived risk of drug use (Johnston, O'Malley, and Bachman, 2002). For example, among illicit drugs, marijuana has the highest level of use and the lowest level of perceived risk (see Figure 1 below). These findings demonstrate that individuals who believe the use of a certain drug involves risk of harm are less likely to use that drug.

Similar findings have also been found as part of the Center for Substance Abuse Prevention's (CSAP) High Risk Youth grant initiative. In this case, several grantee sites found lower rates of initial drug use in school classrooms in which there was a widespread belief in the harmfulness

of drug use in comparison to school classrooms in which this belief was less prominent (CSAP, 1997).

Figure 1



Relationships with Other Measures

Research conducted on this scale found positive relationships between students' perception of the potential risks of drug use with lower rates of 30-day use of cigarettes, alcohol, and marijuana (see Table 4). The strongest relationship was for 30-day use of cigarettes (CSAP, 2003).

Table 4: Correlation of Perceived Risk of Drug Use with Other Measures [(a)]

Other Measures	Time Frame	Correlation (r) to Scale	Correlation Strength
Cigarette Use	30-Day	**.40**	Substantial
Alcohol Use	30-Day	.38	Slight
Marijuana Use	30-Day	.36	Slight
Antisocial Behavior	Not applicable	.30	Slight

[(a)] Bold numbering indicates the *strongest* relationship.

Selected Research Studies

Center for Substance Abuse Prevention (1997). Selected Findings in Prevention: A Decade of Results From the Center for Substance Abuse Prevention (CSAP).

Center for Substance Abuse Prevention (2003). Core Measures Initiative Phase I Recommendations.

Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (2002). Monitoring the Future national survey results on drug use, 1975-2001: Volume 1, Secondary School Students 2001 (NIH Publication No. 02-5106) Bethesda, MD: National Institute on Drug Abuse.

Perceived Peer ATOD Use

Developer
Dr. Bill Hansen of Tanglewood Research (formerly Wake Forest Evaluation)

Source
Normative Beliefs (Specific to Use) Scale

Scale Reliability
Good Reliability: 0.88

Populations
This scale has been used with White, African-American, and Hispanic youth in middle school, junior high school, and high school. It has been specifically tested with African Americans, Whites, by gender, and by student grade level.

Number of Items
This scale consists of 8 items.

Purpose
Assesses beliefs about the prevalence and acceptability of drug use among peers.

Items
1. How many of your closest friends do you think have used marijuana in the past 30 days?
2. How many of your closest friends do you think have been drunk during the past 30 days?
3. What would your best friends think if you tried using marijuana?
4. People who use drugs are stupid. How do you think your closest friends feel about this statement?
5. What would your best friends think if you got drunk once in a while?
6. How many of your closest friends do you think have had some kind of alcoholic beverage during the past 30 days?
7. It is cool to get drunk. How do you think your closest friends feel about this statement?
8. How many of your closest friends do you think have used a drug like cocaine or heroin during the past 30 days?

Rationale for Using Items
Normative beliefs refer to an individual's perceptions of the behaviors of a group of people and what that individual believes the group finds acceptable and unacceptable. Young people who use substances are more likely to over-estimate substance use prevalence rates than are those students who do not use (CSAP, 2003). Hansen and Graham (1991) found that interventions that promote conservative norms are an effective strategy for preventing substance use. Specifically, these researchers found that an intervention designed to correct erroneous beliefs about the prevalence and acceptability of alcohol, marijuana, and cigarettes significantly deterred the onset of use of these substances.

Relationships with Other Measures

Research conducted on this scale found negative relationships between students' beliefs about the prevalence and acceptability of drug use among peers and their actual alcohol, marijuana, and cigarette use (see Table 5). In other words, students who over-estimated the prevalence and acceptability of use among their peers were more likely to use these substances than those students who had more conservative perceptions and vice-versa. The strongest relationship was for alcohol use (CSAP, 2003).

Table 5: Correlation of Beliefs About Peer Norms with Other Measures [(a)]

Other Measures	Time Frame	Correlation (r) to Scale	Correlation Strength
Alcohol Use	Ever Used	**-.71 to -.78**	Strong
Cigarette Use	Ever Used	-.57 to -.60	Substantial to Strong
Smokeless Tobacco Use	Ever Used	-.30 to -.60	Slight to Substantial
Marijuana Use	Ever Used	-.56 to -.62	Substantial to Strong
Other Drug Use	Ever Used	-.35 to -.38	Slight
Drinking and Driving	Ever	-.49 to -.51	Substantial
Problem Behavior	Not applicable	-.41 to -.46	Substantial

[(a)] Bold numbering indicates the *strongest* relationship.

Selected Research Studies

Center for Substance Abuse Prevention (2003). Core Measures Initiative Phase I Recommendations.

Hansen, W.B., & McNeal, R.B. (1997) How D.A.R.E. works: An examination of program effects on mediating variables. *Health Education & Behavior*, 24(2), 165-176.

Hansen, W.B. & Graham, J.W. (1991). Preventing alcohol, marijuana, and cigarette use among adolescents: Peer pressure resistance training versus establishing conservative norms. *Preventive Medicine*, 20, 414-430.

Social Skills Training and/or Life Skills/Peer Resistance

Developer
Dr. Gilbert Botvin of Cornell University Medical College

Source
Botvin Life Skills Training Evaluation – General Assertiveness Scale

Scale Reliability
Good Reliability: 0.88

Population
This scale has been used with White, African-American, Hispanic, middle school, junior high school, and high school students.

Number of Items
This scale consists of 9 items.

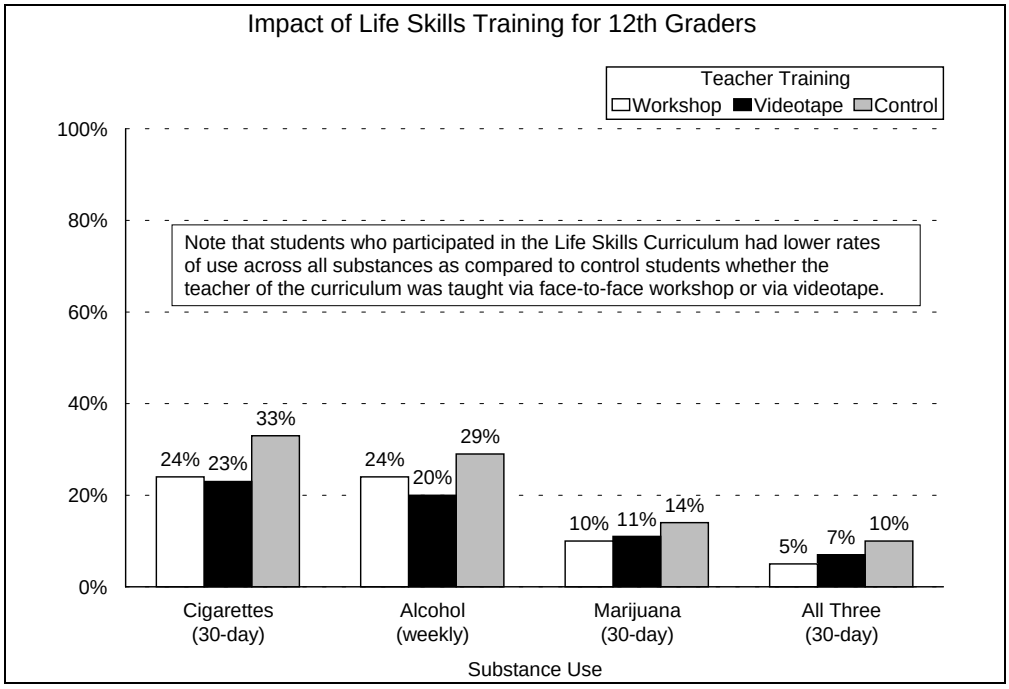
Purpose
Assesses an adolescents' ability to stand up for oneself in a bold or confident manner.

Items
How likely would you be to do the following things?

1. Take something back to the store, if it doesn't work right?
2. Ask people to give back things that they have borrowed, if they forget to give them back to you?
3. Tell someone if they give you less change (money) than you're supposed to get back after you pay for something?
4. Tell people your opinion, even if you know they will not agree with you?
5. Ask someone for a favor?
6. Tell someone to go to the end of the line if they try to cut in line ahead of you?
7. Start a conversation with someone you would like to know better?
8. Keep a conversation going by asking questions?
9. Give and receive compliments without acting or feeling stupid?

Rationale for Using Items
The term "life skills" includes such areas as problem-solving, decision-making, resistance to peer influence, general assertiveness, and social/communication skills. The items above are designed to measure students' general assertiveness skills. Research from long-term experimental trials conducted by Botvin, et al. (1995) has shown that providing students with life skills training as part of prevention efforts is associated with reduced substance use. As shown in Figure 2, students who participated in a life skills curriculum when they were in middle school had lower levels of use when they were in 12th grade than did those students who did not receive life skills training. This pattern was consistent for students who received the curriculum from teachers trained through a face-to-face workshop and for teachers trained through a videotape session.

Figure 2



Similar findings have also been found as part of the Center for Substance Abuse Prevention's (CSAP) Demonstration Projects grant initiative. Specifically, across multiple programs, prevention efforts that incorporated life skills training were associated with lower rates of substance use. Research conducted by St. Pierre et al. (1992) also found that these reductions were sustained over long periods of time, even among economically or socially disadvantaged populations (CSAP, 1997).

Selected Research Studies

Botvin, G.J., Baker, E., Dusenbury, L., Tortu, S., & Botvin, E. (1990). Preventing adolescent drug abuse through a multimodal cognitive-behavioral approach: Results of a 3-year study. *Journal of Consulting and Clinical Psychology*, 58, 437-446.

Botvin, G.J., Baker, E., Dusenbury, L., Botvin, E.M., & Diaz, T. (1995). Long-term follow-up results of a randomized drug abuse prevention trial in a white middle-class population. *Journal of the American Medial Association*, 273(14): 1106-1112.

Center for Substance Abuse Prevention (1997). Selected Findings in Prevention: A Decade of Results From the Center for Substance Abuse Prevention (CSAP).

St. Pierre, T.L., Kaltreider, D.L., Mark, M.M., & Aiken, K.J. (1992). Drug prevention in a community setting: A longitudinal study of the relative effectiveness of a three-year primary prevention program in Boys Clubs across the nation. *American Journal of Community Psychology*, 20(6): 673-706.

ATOD Use (Past 30-Days)

Developer
Dr. Lloyd Johnston of the University of Michigan

Source
These items are taken directly from the *Monitoring the Future* (MTF) survey, a large-scale, national study of secondary school students that has been conducted by the National Institute on Drug Abuse. Each year since 1975, the MTF study has collected data from a representative sample of the students in Grade 12 across the United States, in approximately 125 to 145 public and private schools. Beginning in 1991, the study was expanded to include students in Grades 8 and 10 (CSAP, 2003).

Scale Reliability
These items are assessed individually rather than being combined into a single scale score. Respondents have been found to be highly consistent in their self-reported ATOD-use behaviors over a four-year period. As reported in Johnston, O'Malley, and Bachman (1998), reliability estimates for cigarettes use range from .85 to .91 (good to excellent), from .70 to .80 for alcohol use (acceptable to good), and from .77 to .84 for marijuana use (acceptable to good).

Populations
These items have been used with students in grades 8, 10, and 12.

Number of Items
Twelve items are used to assess 30-day individual substance use.

Purpose
Assesses whether the student used alcohol, tobacco, or other drugs in the past 30 days, as well as questions regarding the quantity of use.

Items
Tobacco Use

1. How frequently have you smoked cigarettes during the past 30 days?
2. How often have you used smokeless tobacco during the past 30 days?
3. To be more precise, during the past 30 days about how many cigarettes have you smoked per day?

Alcohol Use – alcoholic beverages include beer, wine, wine coolers, and liquor.

4. On how many occasions during the last 30 days have you had alcoholic beverages to drink (more than just a few sips)?
5. On how many occasions during the past 30 days (if any) have you been drunk or very high from drinking alcoholic beverages?

Marijuana Use

6. On how many occasions during the last 30 days (if any) have you used marijuana (grass, pot) or hashish (hash, hash oil)?
7. During the LAST MONTH, about how many marijuana cigarettes (joints, reefers), or the equivalent, did you smoke a day, on average? (If you shared them with other people, count only the amount YOU smoked).

Other Drug Use

8. On how many occasions during the last 30 days (if any) have you sniffed glue, or breathed the contents of aerosol spray cans, or inhaled any other gases or sprays in order to get high?
9. On how many occasions (if any) during the last 30 days have you taken LSD (acid)?
10. On how many occasions (if any) during the last 30 days have you taken amphetamines on your own, that is, without a doctor telling you to take them?
11. On how many occasions (if any) during the last 30 days have you taken 'crack' (cocaine in chunk or rock form)?
12. On how many occasions (if any) during the last 30 days have you taken cocaine in any other form (like cocaine powder)?

Rationale for Using Items

These items are used as a measure of actual substance use behavior. While surveys of substance use often collect information on respondents' use in the past 30 days, past year, and over their lifetime, researchers have argued that estimates of use tend to be less reliable for longer time periods because respondents are more likely to mistakenly recall information about their use. In a recent review, Brener et al. (2003) wrote,

> Working under the assumption that higher prevalence rates are more accurate than lower prevalence rates in reports of substance use, evidence that shorter recall periods lead to more accurate reporting can be seen in studies that found proportionally higher prevalence rates of alcohol and other drugs use for shorter periods.

As an example, Brener and colleagues point to a 1981 article by Bachman and O'Malley in which they found that reported 30-day use rates multiplied by 12 exceeded reported 12-month use rates. In other words, since recall is more accurate over shorter periods of time, and 30-day prevalence multiplied by 12 months of the year was higher than reported 12-month use, the reported 12-month use rates were most likely an under-estimate of use due to faulty recall of this information. As a result, Brener et al. conclude that the quality of responses to ATOD prevalence items can be improved by using strategies to facilitate recall, such as using relatively short (i.e., 30-day) reference periods.

Selected Research Studies

Bachman, J.G., Johnston, L.D., & O'Malley, P.M. (1981). Smoking, drinking, and drug use among American high school students: Correlates and trends, 1975-79. *American Journal of Public Health*, 71: 59-69.

Bachman, J.G., & O'Malley, P.M. (1981). When four months equal a year: Inconsistencies in student report of drug use. *Public Opinion Quarterly*, 45: 536-548.

Brener, N.D., Billy, J.O., Grady, W.R.. (2003). Assessment of factors affecting the validity of self-reported health-risk behavior among adolescents: Evidence from the scientific literature. *Journal of Adolescent Health*, 33: 436-457.

Center for Substance Abuse Prevention (2003). Core Measures Initiative Phase I Recommendations.

Johnston, L.D. (1973). *Drugs and American Youth*. Ann Arbor, MI: Institute for Social Research.

Johnston, L.D., O'Malley P.M., & Bachman, J.G. (1998). Monitoring the Future national survey results on drug use, 1975-1997: Volume 1, Secondary School Students 1997 (NIH Publication No 98-4345). Rockville, MD: National Institute on Drug Abuse.

Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (2001). Monitoring the Future national survey results on drug use, 1975-2000: Volume 1, Secondary School Students 2000 (NIH Publication No. 01-4924) Bethesda, MD: National Institute on Drug Abuse.

Osgood, D.W., Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1988). The generality of deviance in late adolescence and early adulthood. *American Sociological Review*, 53, 81-93.

Binge Drinking

Developer
Dr. Lloyd Johnston of the University of Michigan

Source
These items are taken directly from the *Monitoring the Future* (MTF) survey, a large-scale, national study of secondary school students that has been conducted by the National Institute on Drug Abuse. Each year since 1975, the MTF study has collected data from a representative sample of the students in Grade 12 across the United States, in approximately 125 to 145 public and private schools. Beginning in 1991, the study was expanded to include students in Grades 8 and 10 (CSAP, 2003).

Scale Reliability
These items are assessed individually rather than being combined into a single scale score. The *Monitoring the Future* survey is a valid and reliable instrument.

Populations
These items have been used with students in grades 8, 10, and 12.

Number of Items
Six items are used to assess different aspects of binge drinking.

Purpose
Assesses heavy drinking on a given occasion.

Items
1. On how many occasions in your lifetime (if any) have you been drunk or very high from drinking alcoholic beverages?
2. On how many occasions during the past 30 days (if any) have you been drunk or very high from drinking alcoholic beverages?
3. Think back over the LAST TWO WEEKS. How many times have you had five or more drinks in a row?
4. During the past two weeks, how many times have you had 3 or 4 drinks in a row (but no more than)?
5. During the past two weeks, how many times have you had two drinks in a row (but no more than)?
6. During the past two weeks, how many times have you had just one drink?

Rationale for Using Items
The term *binge drinking* among youth populations is often defined as "consuming five or more drinks in a row over a specified time period (e.g., during the past two weeks)." In contrast to items designed to measure alcohol use in the past 30 days or past year, these items are often intended to assess higher-risk drinking behaviors. This type of assessment is important considering that heavy alcohol use among adolescents tends to co-occur with other risky behaviors such as tobacco use, sexual activity, violence, drinking and driving, and suicide (Windle, 1999). For example, based on analyses of data from the *National Household Survey on*

Drug Abuse, Johnson and colleagues (2000) reported strong relationships between binge drinking and smoking. Specifically, adolescents who reported binge drinking in the 30 days prior to the survey were 17 times more likely to have smoked during the past 30 days than adolescents who did not report binge drinking. Similarly, among students who abstained from binge drinking in the past 30 days, almost all of these students (82%) also abstained from smoking.

Selected Research Studies

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Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (2001). Monitoring the Future national survey results on drug use, 1975-2001: Volume 1, Secondary School Students 2000 (NIH Publication NO. 01-4924) Bethesda, MD: National Institute on Drug Abuse.

Windle, M. (1999). *Alcohol Use Among Adolescents.* Thousand Oaks, CA: Sage.

Improvements in Academic Performance

Developer
Dr. Michael Arthur, Dr. J. David Hawkins, Dr. Richard Catalano, and Dr. John Pollard of the Social Development Research Group at the University of Washington

Source
Student Survey of Risk and Protective Factors – Academic Failure

Scale Reliability
This item is assessed individually. The *Student Survey of Risk and Protective Factors* is a valid and reliable instrument.

Populations
This scale has been used with students in grades 6, 8, 10, and 12. It has been specifically tested with African-American, Asian/Pacific Islander, Hispanic, Native American, and White populations.

Purpose
Self-report of last year's grades.

Number of Items
A single item is used to measure self-reported grades.

Items
1. Putting them all together, what were your grades like last year?

Rationale for Using Items
As identified in Hawkins, Catalano, and Miller's (1992) review of risk and protective factors for alcohol and other drug problems in adolescence, school failure has been found to be a predictor of drug abuse (e.g., Jessor, 1976; Robins, 1980). Similarly, poor performance in school has been identified by Smith and Fogg (1978) as a predictor of the *frequency* and *level* of illicit drug use, and Hundleby and Mercer (1987) found that outstanding academic performance reduced the likelihood of frequent drug use among a ninth grade sample. Crum and colleagues (1993) and Wiesbusch (1994) also found a relationship between low academic achievement and early initiation of alcohol use.

Evidence from the Center for Substance Abuse Prevention's High Risk Youth grant initiative were mixed; however, more than half of the sites that found an improvement in schoolwork or in academic self-concept as a result of program activities also witnessed reductions in the incidence of alcohol or other drug use (CSAP, 1997).

Relationships with Other Measures
Research conducted on this item found a relationship between students' self-reported grades and use of alcohol, cigarettes, marijuana, and participation in antisocial behaviors (see Table 6). In other words, students with higher self-reported grades were less likely to use these substances

and to participate in antisocial behaviors. The strongest relationship was for cigarette use in the past 30 days (CSAP, 2003).

Table 6: Correlation of Academic Performance with Other Measures [(a)]

Other Measures	Time Frame	Correlation (r) to Scale	Correlation Strength
Alcohol Use	30 Days	.22	Slight
Cigarette Use	30 Days	**.28**	Slight
Marijuana Use	30 Days	.22	Slight
Antisocial Behavior	Not applicable	.22	Slight

[(a)] Bold numbering indicates the *strongest* relationship.

Selected Research Studies

Arthur, M. W., Hawkins, J. D., Pollard, J. A., Catalano, R. F., & Baglioni, A. J. (2002). Measuring risk and protective factors for substance use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. *Evaluation Review*, 26(2), 575-601.

Center for Substance Abuse Prevention (2003). Core Measures Initiative Phase I Recommendations.

Center for Substance Abuse Prevention (1997). Selected Findings in Prevention: A Decade of Results From the Center for Substance Abuse Prevention (CSAP).

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Hundleby, J.D. & Mercer, G.W. (1987). Family and friends as social environments and their relationship to young adolescents' use of alcohol, tobacco, and marijuana. *Journal of Clinical Psychology*, 44, 125-134.

Jessor, R. (1976). Predicting time of onset of marijuana use: A developmental study of high school youth. *Journal of Consulting and Clinical Psychology*, 44, 125-134.

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Robins, L.N. (1980). The natural history of drug abuse. *Acta Psychiatrica Scandinavia*, 62(supplement 284), 7-20.

Smith, G.M., & Fogg, C.P. (1978). Psychological predictors of early use, late use, and non-use of marijuana among teenage students. In D.B. Kandel (Ed.), *Longitudinal research on drug use: Empirical findings and methodological issues* (pp. 101-112). Washington, DC: Hemisphere-Wiley.

Wiesbusch, C.P. (1994). Antecedents of problem behavior: Their relationship to alcohol refusal style in adolescents. *Dissertation Abstracts International*, 54(8): 2961A.

Little Commitment to School

Developer
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Source
Student Survey of Risk and Protective Factors – Little Commitment to School

Scale Reliability
Acceptable Reliability: 0.76

Populations
This scale has been used with students in grades 6, 8, 10, and 12. It has been specifically tested with African-American, Asian/Pacific Islander, Hispanic, Native American, and White populations.

Purpose
Measures low commitment to school by assessing students' perception of the importance of school, school assignments, and their level of interest/enjoyment in school.

Number of Items
This scale consists of 9 items.

Items
1. How often do you feel that the school work you are assigned is meaningful and important?
2. How interesting are most of your courses to you?
3. How important do you think things you are learning in school are going to be for your later life?

Now thinking back over the past year in school…

4. How often did you enjoy being in school?
5. How often did you hate being in school?
6. How often did you try to do your best in school?

During the LAST FOUR WEEKS…

7. How many whole days have you missed because of illness?
8. How many whole days have you missed because you skipped or cut?
9. How many whole days have you missed for other reasons?

Rationale for Using Items
Hawkins, Catalano, and Miller (1992) identified a low degree of commitment to school as a risk factor of adolescent drug use. This classification was based on the findings from studies such as Kelly and Balch (1971) and Friedman (1983) in which factors such as how much students liked school and how much time students spent on homework were related to levels of drug use. Other factors such as truancy (Gottfredson, 1988) and plans to attend college (Johnston, O'Malley, & Bachman, 1995) were also found to be related to levels of drug use. In other words, students

who reported that they liked school, those that spent more time on homework, those that were truant less often, and those that planned to attend college were less likely to use alcohol, tobacco, or other drugs.

Relationships with Other Measures

Research conducted on this scale found a relationship between students' commitment to school with their use of alcohol, tobacco, marijuana, and other illicit drugs (see Table 7). In other words, students with high levels of school commitment were less likely to use these substances, and vice versa. The strongest relationship was for lifetime use of marijuana (CSAP, 2003).

Table 7: Correlation of Little Commitment to School with Other Measures [(a)]

Other Measures	Time Frame	Correlation (r) to Scale	Correlation Strength
Cigarette Use	Lifetime	.28	Slight
	30-Day	.27	Slight
Alcohol Use	Lifetime	.20	Slight
	30-Day	.26	Slight
Marijuana Use	Lifetime	**.30**	Slight
	30-Day	.26	Slight
Illicit Drug Use	Lifetime	.27	Slight
	30-Day	.22	Slight

[(a)] Bold numbering indicates the *strongest* relationship.

Selected Research Studies

Arthur, M. W., Hawkins, J. D., Pollard, J. A., Catalano, R. F., & Baglioni, A. J. (2002). Measuring risk and protective factors for substance use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. *Evaluation Review*, 26(2), 575-601.

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Kelly, D.H. & Balch, R.W. (1971). Social origins and school failure: A re-examination of Cohen's theory of working class delinquency. *Pacific Social Review*, 14, 413-430.

Pollard, J. A., Hawkins, J. D., & Arthur, M. W. (1999). Risk and protection: Are both necessary to understand diverse behavioral outcomes in adolescence? *Social Work Research*, 23(8), 145-158.

Perceived Parental Attitudes Toward Youth ATOD Use

Developer
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Source
Student Survey of Risk and Protective Factors – Parental Attitudes Favorable Toward Drug Use

Scale Reliability
Acceptable Reliability: 0.78

Populations
This scale has been used with students in grades 6, 8, 10, and 12. It has been specifically tested with African-Americans, Asian/Pacific Islanders, European Americans, Hispanics, Native Americans, Other Ethnic Groups, by gender, and by student grade level.

Number of Items
This scale consists of 3 items.

Purpose
Assesses students' perceptions of parents' feelings about respondent using specific substances.

Items
1. How wrong do your parents feel it would be for you to drink beer, wine, or hard liquor (for example, vodka, whiskey, or gin) regularly?
2. How wrong do your parents feel it would be for you to smoke cigarettes?
3. How wrong do your parents feel it would be for you to smoke marijuana?

Rationale for Using Items
Research has found that permissive parental attitudes towards drug use are associated with adolescents' use of drugs (McDermott, 1984; Hansen, 1987). For example, Barnes and Welte (1986) found that parental approval of drinking was a significant predictor of the amount of alcohol consumed by adolescents, and Brook and colleagues (1986) found that parental tolerance of drug use predicted adolescent drug use. These findings have been consistently shown to apply to Whites, Hispanics, African Americans, Native Americans, and Asian Americans (Jessor, Donovan, & Windmer, 1980).

Findings from the Center for Substance Abuse Prevention's High Risk Youth grant initiative have also shown that messages of abstinence by parents is associated with anti-drug attitudes among younger children (CSAP, 1997).

Relationships with Other Measures
Research conducted on this scale found a relationship between students' perceptions of their parents' attitudes towards drug use and use of alcohol, cigarettes, marijuana, and participation in antisocial behaviors (see Table 8). In other words, students who perceived their parents held

negative attitudes towards drug use were less likely to use these substances and to participate in antisocial behaviors. The strongest relationship was for alcohol use in the past 30 days (CSAP, 2003).

Table 8: Correlation of Parental Attitudes Toward Drug Use with Other Measures [(a)]

Other Measures	Time Frame	Correlation (r) to Scale	Correlation Strength
Alcohol Use	30 Days	**.46**	Substantial
Cigarette Use	30 Days	.45	Substantial
Marijuana Use	30 Days	.41	Substantial
Antisocial Behavior	Not applicable	.38	Slight

[(a)] Bold numbering indicates the *strongest* relationship.

Selected Research Studies

Arthur, M. W., Hawkins, J. D., Pollard, J. A., Catalano, R. F., & Baglioni, A. J. (2002). Measuring risk and protective factors for substance use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. *Evaluation Review*, 26(2), 575-601.

Barnes, G.M., & Welte, J.W., (1986). Patterns and predictors of alcohol use among 7-12th grade students in New York State. *Journal of Studies on Alcohol*, 47, 53-62.

Brook, J.S., Gordon, A.S., Whiteman, M., & Cohen, P. (1986). Some models and mechanisms for explaining the impact of maternal and adolescent characteristics on adolescent stage of drug use. *Developmental Psychology*, 22, 460-467.

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Hawkins, J.D., Arthur, M.W., & Catalano, R.F. (1997). Six State Consortium for Prevention Needs Assessment Studies: Final Report. Seattle: University of Washington, Social Development Research Group.

Jessor, R., Donovan, J.E., & Windmer, K. (1980). *Psychosocial factors in adolescent alcohol and drug use: The 1980 National Sample Study, and the 1974-1978 Panel Study*. Unpublished final report, University of Colorado, Institute of Behavioral Science. Boulder.

Liddle, H.A., & Rowe, C. (1998). Family Measures in Drug Abuse Prevention. NIDA Monograph 177: 324-372. (NIH Publication No. 99-124315/LL) Bethesda, MD: National Institute on Drug Abuse.

McDermott, D. (1984). The relationship of parental drug use and parent's attitude concerning adolescent drug use to adolescent drug use. *Adolescence,* 19, 89-97.

Pollard, J. A., Hawkins, J. D., & Arthur, M. W. (1999). Risk and protection: Are both necessary to understand diverse behavioral outcomes in adolescence? *Social Work Research*, 23(8), 145-158.

Parenting Practices (Poor Discipline)

Developer
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Source
Student Survey of Risk and Protective Factors – Poor Discipline

Scale Reliability
Acceptable Reliability: 0.76

Populations
This scale has been used with students in grades 6, 8, 10, and 12. It has been specifically tested by gender and student grade level.

Number of Items
This scale consists of 3 items.

Purpose
Assesses students' perception of the likelihood of being caught by parents in antisocial behavior, parents monitoring of respondents' whereabouts, and the setting of clear rules.

Items
1. If you drank some beer or wine or liquor (for example, vodka, whiskey, or gin) without your parents' permission, would you be caught by your parents?
2. If you skipped school, would you be caught by your parents?
3. If you carried a handgun without your parents' permission, would you be caught by your parents?

Rationale for Using Items
Research has found that lack of, or inconsistent, parental discipline practices predict initiation of drug use (Baumrind, 1983; Penning & Barnes, 1982). For example, Brook and colleagues (1990) found that mothers' control patterns that included setting requirements for responsible behavior led to less marijuana use. As such, Hawkins, Catalano, and Miller (1992) conclude, "the risk of drug abuse appears to be increased by family management practices characterized by unclear expectations for behavior, and poor monitoring of behavior...".

Relationships with Other Measures
Research conducted on this scale found a relationship between poor parental discipline with students' use of alcohol, tobacco, marijuana, and other illicit drugs (see Table 9). In other words, poor parental discipline practices were related to higher levels of use of each of these substances. The strongest relationship was for lifetime use of cigarettes (CSAP, 2003).

Table 9: Correlation of Poor Parental Discipline with Other Measures [(a)]

Other Measures	Time Frame	Correlation (r) to Scale	Correlation Strength
Cigarette Use	Lifetime	**.39**	Slight
	30-Day	.31	Slight
Alcohol Use	Lifetime	.37	Slight
	30-Day	.38	Slight
Marijuana Use	Lifetime	.38	Slight
	30-Day	.28	Slight
Illicit Drug Use	Lifetime	.33	Slight
	30-Day	.24	Slight

[(a)] Bold numbering indicates the *strongest* relationship.

Selected Research Studies

Arthur, M. W., Hawkins, J. D., Pollard, J. A., Catalano, R. F., & Baglioni, A. J. (2002). Measuring risk and protective factors for substance use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. *Evaluation Review*, 26(2), 575-601.

Baumrind, D. (1983, October). *Why adolescents take chances – And why they don't.* Paper presented at the National Institute for Child Health and Human Development, Bethesda, MD.

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Penning, M., & Barnes, G.E. (1982). Adolescent marijuana use: A review. *International Journal of Addictions*, 17, 749-791.

Pollard, J. A., Hawkins, J. D., & Arthur, M. W. (1999). Risk and protection: Are both necessary to understand diverse behavioral outcomes in adolescence? *Social Work Research*, 23(8), 145-158.

Parenting Practices (Poor Family Management)

Developer
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Source
Student Survey of Risk and Protective Factors – Poor Family Management

Scale Reliability
Acceptable Reliability: 0.79

Populations
This scale has been used with students in grades 6, 8, 10, and 12. It has been specifically tested with African Americans, Asian Americans/Pacific Islanders, European Americans, Hispanics, Native Americans, Other Ethnic Groups, by gender, and student grade level.

Number of Items
This scale consists of 6 items.

Purpose
Assesses students' perception of the likelihood of being caught by parents in antisocial behavior, parents monitoring of respondents' whereabouts, and the setting of clear rules.

Items
1. My parents ask if I've gotten my homework done.
2. My parents want me to call if I'm going to be late getting home.
3. Would your parents know if you did not come home on time?
4. When I am not at home, one of my parents knows where I am and who I am with.
5. The rules in my family are clear.
6. My family has clear rules about alcohol and drug abuse.

Rationale for Using Items
Research has found that lack of, or inconsistent, parental discipline practices predict initiation of drug use (Baumrind, 1983; Penning & Barnes, 1982). For example, Brook and colleagues (1990) found that mothers' control patterns that included setting requirements for responsible behavior led to less marijuana use. As such, Hawkins, Catalano, and Miller (1992) conclude, "the risk of drug abuse appears to be increased by family management practices characterized by unclear expectations for behavior, and poor monitoring of behavior...".

Relationships with Other Measures
Research conducted on this scale found a relationship between poor family management practices with use of alcohol, cigarettes, marijuana, and participation in antisocial behaviors (see Table 10). In other words, poor family management practices were related to use of substances and participation in antisocial behaviors. The strongest relationship was for alcohol use in the past 30 days (CSAP, 2003).

Table 10: Correlation of Poor Family Management Practices with Other Measures [(a)]

Other Measures	Time Frame	Correlation (r) to Scale	Correlation Strength
Alcohol Use	30 Days	**.31**	Slight
Cigarette Use	30 Days	.27	Slight
Marijuana Use	30 Days	.24	Slight
Antisocial Behavior	Not applicable	.26	Slight

[(a)] Bold numbering indicates the *strongest* relationship.

Selected Research Studies

Arthur, M. W., Hawkins, J. D., Pollard, J. A., Catalano, R. F., & Baglioni, A. J. (2002). Measuring risk and protective factors for substance use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. *Evaluation Review*, 26(2), 575-601.

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